



TLC 
The Lowell Civic Collaborative

The Lowell Civic Collaborative:

*A Guidebook for Projects
Between Community Colleges
and National Parks*

Susan Thomson, Editor





“Middlesex Community College’s collaboration with Lowell National Historical Park has resulted in numerous projects that have met a wide variety of community needs and impacted many diverse populations.”

*-- Carole Cowan
President, Middlesex Community College
Bedford and Lowell, Massachusetts*



“We feel confident that, with the powerful partnerships we hold, Lowell National Historical Park will stand as a model for community stewardship of our national treasures and unveil the stories that behold Lowell’s past, present and future.”



*-- Michael Creasey
Superintendent, Lowell National Historical Park
Lowell, Massachusetts*



The Lowell Civic Collaborative



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Acknowledgements

This guidebook presents collaborative projects developed over the past three years by students, faculty and staff at Middlesex Community College (MCC) and park interpreters at Lowell National Historical Park and Minute Man National Historical Park. Yet, like the individual projects profiled within, this guide began with an idea by one person, which then grew to involve many more people and ideas. For starting us off on this project and for her continuing inspiration, I would like to give special thanks to MCC Professor Donna Killian Duffy, Lowell Civic Collaborative Project Director. I would also like to thank Sheri Denk, Lowell Civic Collaborative Coordinator and MCC Service-Learning Coordinator, for arranging so many of the details and serving as a reservoir of creativity for organizing this collaborative work.

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Susan Thomson, Ph.D.
TLC Project Researcher
MCC Adjunct Professor, Anthropology

“If you have an apple and I have an apple and we exchange these apples, then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.”

- George Bernard Shaw

“The most critical demand is to restore to higher education its original purpose of preparing graduates for a life of involved and committed citizenship. The advancement of civic learning, therefore, must become higher education’s most central goal.”

- Frank Newman, author of *Higher Education and the American Resurgence*, A Carnegie Foundation Special Report (1985)

Preface

In 2003, Middlesex Community College, with campuses in Lowell and Bedford, Massachusetts, and Lowell National Historical Park, located in downtown Lowell, partnered together to launch the Lowell Civic Collaborative (TLC). This innovative three-year project aimed to increase civic engagement and community service among the college’s young-adult student population. Backed with funding through a Learn and Serve America grant from the Corporation for National and Community Service, TLC featured civic dialogues between community members and students, as well as faculty institutes to restructure MCC courses with a civic engagement and/or service-learning component.

One of the most significant outcomes of the Lowell Civic Collaborative faculty institutes was a series of original, collaborative projects conducted by MCC students and faculty at Lowell National Historical Park (LNHP), and also at Minute Man National Historical Park (MMNHP), running through historic Lexington, Lincoln and Concord near MCC’s Bedford campus. To support the work done by individual faculty members, implementation of these projects rested with the TLC Project Team. This group of key people representing both the college and the national parks met semi-monthly and served as liaison between the parks, college professors and students.

MCC has a long tradition of service-learning, but collaboration with the national parks was a new idea. Preliminary surveys revealed that many students were unaware of national park exhibits and programs; conversely, the national parks wanted to extend their connections into the community. To meet these joint goals, collaborative projects from three major divisions of the college (Humanities, Math/Science and Social Sciences) were created. It is these projects -- complete with detailed instructions, suggestions for implementation and student reflections -- that are highlighted in this guidebook.

It is our hope that you will find this book useful in other settings where community colleges and national parks are in proximity. Many of the projects offer immediate connections to most college-national park scenarios, such as Robert Bowles’ “Math Makes a Civic Connection: The Staircase Project” or Donna Killian Duffy’s “What’s a Reasonable Accommodation? Adopt an Exhibit and Find Out!” Others are quite specific to exhibits and landscape at either LNHP or MMNHP, such as Jessie Klein’s “Effect of Sheep Grazing on Invasive Species Growth,” Linda Dart-Kathios’ “Daily Stream Flow” or Pat Morrow’s “20th Century Lowell Mill Girls’ Oral Histories.” All of the projects paint vivid pictures both of the national parks and of the Middlesex students who visited and performed service, providing testimony that at its best, civic engagement is a two-way street.

While the grant for the Lowell Civic Collaborative has officially ended, the partnerships between Middlesex Community College, Lowell National Historical Park and Minute Man National Historical Park are firmly in place -- as are the many lessons learned and services delivered by students, faculty and park staff. With careful tending, this mutual engagement will continue to grow and flourish in years to come.

The Lowell Civic Collaborative Project Team, May 2006

- Donna Killian Duffy, TLC Project Director (2005-2006) and MCC Professor
- Becky Warren, LNHP Liaison and Supervisory Park Interpreter
- Sheri Denk, TLC Coordinator and MCC Service-Learning Coordinator
- Cynthia Lynch, MCC Assistant Service-Learning Coordinator
- GERALYN VASILE, TLC Assistant Coordinator
- Susan Thomson, TLC Researcher and MCC Adjunct Professor

Previous Members of the TLC Project Team

- Pamela Edington, TLC Project Director (2003-2005) and former MCC Dean
- Audrey Ambrosino, LNHP Liaison (2003-2004), former LNHP Public Information Officer and MCC Faculty
- Rachel Levine, TLC Assistant (2005-2006)

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“In everyone's life, at some time, our inner fire goes out. It is then burst into flame by an encounter with another human being. We should all be thankful for those people who rekindle the inner spirit.”

- Albert Schweitzer
philosopher, physician
and humanitarian
1952 Nobel Peace
Prize winner

Dedication

Thank you to Middlesex Community College students for being the people who rekindle our spirits; your enthusiasm, hard work, compassion, and willingness to make a difference restore our hope for the future.

*Projects
in the
Humanities*



Cambodian Expressions: A Civic Engagement Project

Professor Margaret Rack

MCC Course: Art Appreciation

Abstract

Students helped the Cambodian Artist's Association (CAA) with tasks in mounting the art exhibit *Cambodian Expressions 2005* at the Boott Mills Gallery located in Lowell National Historical Park.

Most students, when asked to define art, describe a process of the artist expressing personal feelings for the aesthetic enjoyment of the viewer. A primary goal for the Art Appreciation course is to enable students to see art as connected to life in more complex ways: defining culture, reflecting values, integrated into the political and social structures of societies, and changing over time. This civic engagement project met a need in the community and provided an opportunity for students to gain nuanced understandings about art and artists within a specific local community.

*“Meeting Rady Mon!
He is such a terrific
role model, I will (be)
helping him out as a
prospective city
councilor running next
term.”*

- MCC student

People, Time and Materials

People: One class of 28 students

Time: This was a semester-long project. To engage the entire class, we developed several tasks to help with various aspects of the exhibition. Classroom time was about four periods or portions of class periods: one period to explain the project and choose tasks; a second for a site visit to the gallery; a third to meet the contact person from CAA and learn more about the festival initiative; and a fourth for a follow-up session with the CAA contact to trouble-shoot and check on progress. In addition, the last 10-15 minutes of each one-hour, twice-weekly class was set aside to check in on progress and provide guidance.

Student time outside class varied with the tasks:

- Artist interviews and development of exhibit wall text: Students worked individually on interviews; one artist per student (30 to 60 minutes for each interview, 60 to 90 minutes for transcription and formatting of notes). Some students did preliminary research on-line about individual artists (60 minutes).
- Postcard design: Three students worked as a team (four hours for first draft, two to four hours for changes).
- Poster design: One student designed the 17x11-inch, full color poster (eight + hours).
- Film search: Students contacted local organizations to seek youth-authored videos and/or digital stories to show at the festival film show. They previewed the films and made recommendations to the festival organizers. Five students worked as a team (four to five hours).
- Public relations: One student developed a list of sites to poster, and delivered the posters (two to three hours).
- Brochure design: Two students designed a single folio program for the opening event (more than six hours).
- In addition, students were invited to exhibit their artwork in the show. Five eventually participated. Their time investment in producing the artwork was not

measured, but it is fair to say it was many hours. One student took the lead in recruiting the exhibiting student artists, keeping them on schedule, and informing them about drop-off times and framing options (Cambodian Expressions subsidized the framing).

Materials: Graphic design majors worked on the three design projects and used the school computer lab to develop their work. They provided digital files to be transmitted to commercial printers for the final product.

How To Do This Project With Your Class

- Meet with the organizers of the festival and with the specific persons tasked with the art show (this show was one component of a month-long festival.) This was facilitated since I had previously established connection with the key contact for the art show. Initially, meetings focused on getting an overview of the show; subsequent meetings developed specific tasks.
- Collect the mission statement and prior years' newspaper articles on the festival to make a package of information for each student.
- Develop curriculum materials, including readings and images relevant to the artistic and ethnic heritage of the art show. For this show, materials about Khmer traditional arts and Cambodian history were provided. This community of artists is deeply affected by a legacy of genocide, war and displacement; therefore students need to gain empathetic understandings of the refugee experience in order to access the meaning of the artworks and the motivations of the artists.
- Collect the names and contact information for the artists, and text and photos for the brochure, postcard and poster.
- Working with the community contact, create a timeline for each task.
- Introduce the project to students, explaining the community need and connection to the syllabus.
- Invite the community contact to the classroom for a presentation and question/answer session.
- Provide instruction and practice in class about conducting interviews (I'm going to focus only on the artist interviews in this document).
- For the artist interviews, the community contact provided questions, but in class we discussed the strategy and significance of the questions.
- The students were warned to expect to have to try multiple times to contact the artists, and we developed various strategies for the first and follow-up calls. Rehearsing a written script is very helpful.
- While doing the interview, students did not use recorders, rather took notes. They summarized and used direct quotes. They submitted a draft to their interviewee for comment and corrections.
- Students provided an electronic copy of the interview to the festival contact so that final formatting and printing could be standardized.
- Students were told that if they did not follow through on their task, the artist they were assigned would have no wall text in the exhibit.
- After the art exhibit opened and the work was completed, students wrote one page reflections on their experience.

Reflection

Student reactions ranged from those who were highly enthused and interested in continuing commitments, to reluctant converts.

"Meeting Rady Mon! He is such a terrific role model, I will (be) helping him out as a prospective city councilor running next term." -- MCC student

"Helping in the community. To tell the truth, it's actually a very good class but the mandatory volunteering was kind of odd." -- MCC student

Tips for Success

The scope of the many tasks was only possible because the class had many graphic design majors. And, because, as instructor, I had skills and experience in organizing and installing exhibitions, as well as developing print material. However, the interview project is accessible to any class and was a valuable contribution. All but one task -- the postcard -- was successful. This failure was due, in part, because the team was not able to function well together -- some of the members lacked skills for collaboration. I had thought this to be a straight-forward task, but with dysfunctional teammates, even with intervention, it stalled. Fortunately, I had a back-up plan with the festival contact.

The students were highly motivated to complete their tasks because they realized that if they did not, they would publicly let people down, and because their contributions visibly and substantially enhanced the festival show. I also liked the aspect of being able to meet and speak directly with the artists. Several students attended the opening reception and were publicly acknowledged for their contribution. All students went to see the show.

The American Dream: Lowell National Historical Park Site Visit

Professor Carolyn Fletcher

MCC Course: The American Dream

Abstract

In conjunction with three week-long units of study, students in this interdisciplinary humanities honors course, titled The American Dream, visited Lowell National Historical Park. The specific units covered that correlated with the LNHP visit included: Immigration and Assimilation; Industrialization and Urbanization; and Marginalization. Building upon these units, raising awareness and knowledge about LNHP as a public resource was a course goal. Selected readings, including *Lowell: The Story of an Industrial City*, an official National Park Handbook, provided background and historical information. A lecture and tour of LNHP facilities (including the mill, mill girls' accommodations, weaving room and museum) were included in the site visit.

People, Time and Materials

People: There were 15 students in the class. We were met at LNHP by park interpreters who provided a lecture and guided tour.

Time: The American Dream met once a week for almost three hours, which was perfect for field trips. We visited the park during our scheduled Wednesday class period: 12:30 to 3:15 p.m. An initial lecture by Park Interpreter Becky Warren was arranged, followed by a tour of facilities and a visit to the park museum.

Materials: Students were assigned related readings for this experience, as well as the 110-page National Park Handbook, which was an excellent academic enhancement for this trip. Middlesex Community College provided transportation by van to and from LNHP.

Reflection

Students were resoundingly enthusiastic about the LNHP experience. Many of them lived in the area, but had never visited the facilities, which are well preserved and fascinating. Lowell National Historical Park did a terrific job gearing the tour to a mature academic audience.

Since this academic activity was so close to the students' homes, the interest level was very high. The information in the handbook, *Lowell: The Story of an Industrial City*, was invaluable as a teaching tool: well written, informative and educational. Also, the experience of actually seeing (and hearing) the enormous looms at full-tilt was something no student will forget. Anyone studying the Industrial Revolution and its effects on society will find a LNHP visit well worth the logistical challenges.



Students were resoundingly enthusiastic about the LNHP experience. Many of them lived in the area, but had never visited the facilities, which are well preserved and fascinating. Lowell National Historical Park did a terrific job gearing the tour to a mature academic audience.

Useful References

- Middlesex Community College Writing Across the Curriculum Committee, eds. 1997. *Not Born in the U.S.A.: A Reader on the Immigrant Experience*. (Out of print; available in the MCC library.)
- National Park Service. *Lowell: The Story of an Industrial City*. 1992. Washington, D.C.: Division of Publications, National Park Service.
- Ravitch, Diane, ed. 2000. *The American Reader: Words that Moved a Nation*. New York: Harper Collins.



This idea culminated in a performance that provided a young audience with information about the girls who had actually worked in the mills of Lowell. It was our hope that the audience would not only gain some historical knowledge, but become involved on a personal level with the stories of these girls.

The Mill Girls: A Theater Performance

Professor Karen Oster

MCC Course: Playmaking in Early Childhood Education

Abstract

Initially, this course included service-learning placements at a variety of community agencies. At these sites, students did activities with the children, such as helping them write and perform their own original folktale, and producing a video about bullying and peer pressure. While meeting with staff at Lowell National Historical Park through a TLC faculty institute, an idea evolved to use the park's archival resources to compile letters, songs and photos from Lowell's "mill girls" and create a theater piece appropriate for school-age children. This idea was embraced by one student in the class and culminated in a performance that provided a young audience with information about the girls who had actually worked in the mills of Lowell. It was our hope that the audience would not only gain some historical knowledge, but become involved on a personal level with the stories of these girls. In this way, the learning experience would be more profound.

People, Time and Materials

People: Christine Lucas (actress/student), Abbey Baker(singer/actress), Karen Oster (supervising faculty), David Zoffoli (MCC Chair of Performing Arts), David Larrick (technical director), Joe Eiler (graphic arts faculty) and Becky Warren (Lowell National Historical Park).

Time: This semester-long service-learning project was undertaken by one student, who worked with LNHP and spent many hours outside of class. She periodically reported her progress in class to the rest of the students.

Materials: Costumes, letters, lighting, media (PowerPoint presentation), advertising (posters), props (ink wells and pens), desks and chairs (scenery).

How To Do This Project With Your Class

- Compile letters that are relevant to the project and suitable for a young audience.
- Sort these letters into subjects; i.e. illness, treatment of the girls, lodging, homesickness, etc.
- Research music; i.e. work songs to weave throughout the piece, either live or recorded.
- Compile photos that may be digitally reproduced in a PowerPoint presentation. These photos may serve as the backdrop for the piece.
- Discuss advertising with the graphic arts department, research a source for costuming, and discuss the venue with the theater department to secure a stage for the performance.

Useful References

- To view our performance, use the following link (RealPlayer is required): http://lucas.middlesex.mass.edu/RAMGEN/mcginnessn/Civic_collaborative.rm

20th Century Lowell Mill Girls' Oral Histories

Professor Patricia Morrow

MCC Course: Women Leaders of the 20th Century

Abstract

Lowell National Historical Park staff worked with students to complete an electronically accessible evaluation and summary of several 20th-century Lowell mill girls' oral histories that had been transcribed from audio tape. Students had the opportunity to learn about their community and its history from residents who lived and worked the story, as well as to improve their critical thinking, summarizing, computer and presentation skills. The work they completed was a valuable contribution to the research archives at LNHP, thus demonstrating the practical importance of civic engagement.

People, Time and Materials

People: Seven students converted 24 oral histories into searchable electronic format.

Time: This was a semester-long service-learning project. Students completed a tour of Boott Mills, met with Park Interpreter Jack Herlihy and his staff, and then were trained in procedures to convert selected oral histories into an electronic searchable format for use by future researchers.

Students were required to photocopy a typed history; summarize the history; and convert the summary and information regarding the history into searchable format. Since several of the histories were quite lengthy, the amount of time to complete each document varied.

Materials: Students were required to submit work via word processed hard copy, e-mail and CD.

How To Do This Project With Your Class

- Students were required to attend a tour of Boott Mills; complete the oral history selection process; read the LNHP handbook, *Lowell: The Story of an Industrial City*; and understand the need for strict confidentiality with this material.
- Once the above steps were completed, students commenced the reading, summary and conversion of the histories into electronic format. Skills in summarizing lengthy oral histories were supported through in-class work. However, students must be willing and able to work independently, as the vast majority of this work was completed outside of face-to-face class time.
- Students presented their findings to the class and a general discussion regarding the process was completed.
- After careful review by the instructor, the final summaries were submitted to LNHP.



“The project created a valuable product that both satisfied class curriculum and will benefit the researching public.”

- Jack Herlihy, Lowell
National Historical Park

Reflections

"It would be difficult to sum up in a few paragraphs what I've learned from this project. I could write an essay or a song, or perhaps write a prose in another language. But all those things would not suffice. So instead I'll just say this: In doing this project, in my quest to find the beauty of Lowell, I found parts of myself I would not have otherwise found. And that...is more than enough." -- MCC student

"The project created a valuable product that both satisfied class curriculum and will benefit the researching public." -- Jack Herlihy, Lowell National Historical Park

Useful References

National Park Service. 1992. *Lowell: The Story of an Industrial City*. Washington, D.C.: Division of Publications, National Park Service.

Music & Mill Girls: Student Connections with Boott Cotton Mills

Professor Eileen Steeples

MCC Course: English Composition I

Abstract

As part of their coursework in English Composition I, students are required to complete a research project. They are encouraged to choose something that interests them and that they want to know more about. To help with this process, students visited Boott Cotton Mills at Lowell National Historical Park to learn more about the people who once owned and operated these enterprises. Outstanding class research projects included two students with an interest in music who performed songs written by the mill girls, and research that led a student to the discovery that one of her own relatives had worked at Boott Mills.

Fostering Student Connections

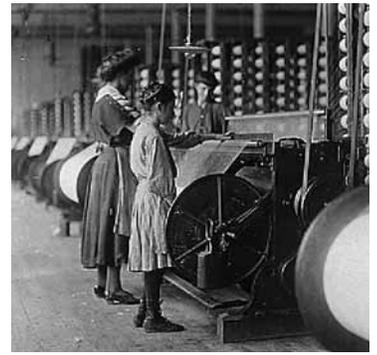
The students in my English Composition I class had the opportunity to experience research first-hand through MCC's collaboration with Lowell National Historical Park. I wanted to find something that the students would be very interested in writing about for their research projects, and the Lowell Civic Collaborative provided me with the perfect vehicle for doing so.

I met several times with Becky Warren, LNHP Supervisory Park Interpreter. We discussed topics of local significance that we could use with the students that would pique their interest and keep them interested throughout the research phase of this culminating project for the course. We discovered many topics that lent themselves to valuable research projects, including immigration issues, industry and commerce, and women's issues.

Students were encouraged to choose something that interested them and that they wanted to know more about. To help students choose topics, Warren arranged for our class to visit LNHP and take a private tour conducted specifically by an interpreter who knew and understood why we were there. I asked for two separate visits for students to be introduced to Boott Cotton Mills and learn more about the people who owned and operated these enterprises.

Our Research Projects

The program was a resounding success, resulting in better papers than I could ever have hoped for. The students were very engaged, and learned a tremendous amount about the history of the places where they lived and worked. In one instance, two students were able to come together with LNHP Interpreter and musician Alex Demas and learn about the music of the period. Both of these students were intensely interested in music themselves, and learning about the music of the time, as well as the history of the songs the mill girls wrote about their own lives and working conditions, kept them extremely interested. These students collaborated together on their topic. Their culminating project included music from the era. They played and sang for our class and ultimately for the end-of-the-year TLC celebration. I was so proud of them. But better still, they were proud of their



This was a resounding success and one that the students and I both enjoyed. The connections the students made with their community and each other will have lasting benefits for all.

accomplishments, as well. There is not a doubt in my mind that this project had an impact on these young people. Working together to achieve a goal, they learned much about community and about the people who made the Lowell area what it is today. The connections they made will reach far into their future. Who knows where it will ultimately end up?

Another interesting and wonderful project that grew out of this assignment was a paper written by a student focusing on one of the mill girls that lived and worked in Boott Cotton Mills. During the research process, this student made two amazing discoveries. First, she learned that her neighbor was actually the niece of a mill girl. The neighbor had lots of stories to tell about that aunt, and this first-hand information was highly motivating and made the student's paper much easier to write. Additionally, during her research, the student discovered that one of her own relatives actually worked at the mill. Needless to say, this real-life connection made her research paper very personal and she did an outstanding job on it.

As an instructor, I was amazed at how these students stuck with the project and were so interested in writing about something they could see, hear and touch. I highly recommend this type of experience for any kind of classroom project. My students even asked to go back to LNHP for a third visit to see even more of the mill and learn more about the girls who had worked there. The culminating projects for these research papers ranged from those mentioned above to PowerPoint presentations, poster presentations and other projects, such as a slide show and a textile display.

In the future, I will incorporate more projects like this into my courses. This was a resounding success and one that the students and I both enjoyed. The connections the students made with their community and each other will have lasting benefits for all.

Get Your Groove On: Improvisation as a Path to Participation

Professor Jean Trounstone

MCC Improvisational Theater Troupe: Matter of Fact

Abstract

Matter of Fact, an improvisational theater troupe in operation for 15 years at Middlesex Community College, spent the past two years developing improvisational works that were performed in the high school and college setting. To meet goals of the Lowell Civic Collaborative, these unscripted performances were specifically created with the purpose of developing more dialogue in the Lowell community. Utilizing our unique combination of involving troupe participants in all aspects of the process, we sought to engage ourselves in broader civic issues, as well as raise questions through performance. Also, in order to offer improvisational technique to the wider community, with funds from a Learn and Serve America grant, the group has put together a short video. This video shows teachers how to use improv in the classroom to increase dialogue and engagement of any controversy set forth by the teacher. These same resources will be made available to the interpretive and education staff at Lowell National Historical Park to interpret the story of the Industrial Revolution, globalization and immigration.

Group Profile

Matter of Fact is a group of approximately 10 volunteers, including MCC students, former students, staff, faculty and members of the community, who come together to develop and perform skits about controversial social issues. We never script, but create improvisations that can be repeated, hitting the major points of concern and still allowing room for spontaneity. Also, we conduct "talk-backs" with high school and college audiences after our presentations.

At the heart of Matter of Fact is the notion that involving the body, as well as the mind, helps energize a discussion for participants, while watching theatrical performance can stimulate dialogue about issues. Our mission has always been to get people to think more critically and to raise questions, rather than provide answers. The group has created scenarios for high schools on issues such as alcoholism and drug abuse, diversity concerns, racism, date rape, homophobia, teen pregnancy, teenage homelessness and dropping out of school. More recently, we have developed shows for colleges on civility issues, breaking through stereotyping, and freedom of speech concerns. We feel that theater can be used to explore any controversial concern, be it a social issue or a topic that arises from class curriculum.

Our talk-back sessions with our audiences after a show are nonagenda based, but are aimed at creating conversation. These dialogues are important to our process. It is a first step toward allowing the audience to be, as famed theater innovator Augusto Boal wrote, "spect-actors." Through the years, we have developed a teachable working creative method that depends on the principle that drama creates conflict, and that conflict, when well handled, creates challenge, provokes thought and can lead to new ideas. Group participants have much to say in how we develop improvs, and while I function as director, I often position myself as more of a



"The students expressed to me how much they enjoyed the improvisations. They felt the discussions that followed were very helpful in understanding the different options that might be available to handle these or other sensitive issues that today's teens may face."

- Sheila Gagnon, Peer Advisor, Dracut Public Schools

“facilitator.” This participatory approach means that while we always have new participants, many Matter of Fact members have been around for six to 12 years.

Our Civic Engagement Project

Performance

The first year of our project involved creating and developing improvisations for performance as part of Liberal Arts Weekend at MCC’s Bedford campus. Approximately 50 to 60 students attended this spring-semester event, which offered academic credit for participation in a panoply of activities exploring questions of American identity. To create our pieces, we met once a week for almost three hours during the first semester and two months into the second semester. Matter of Fact developed a series of improvisations exploring controversies, such as saying the U.S. Pledge of Allegiance in Spanish; recruitment of college students for the armed forces; air travel for all Americans in an age of terrorism; and our responsibility in times of natural disaster (like the recent tsunami).

One of the important points in this process is the realization that controversy must not be shied away from in developing an improvisation. In order to get to the “meat and potatoes” of an issue, we need to acknowledge that true art is never “safe.” There must always be an edge that provokes, so that there can be honest discussion and students’ real issues can be raised. Therefore, scenarios are necessarily provocative, i.e. the recruiter lies to get a student to join the army; a young woman is seated next to an Islamic-American on an airplane; a group of friends make fun of another for starting a tsunami fund raiser, until they find out one of her friends was killed in Thailand. This allows students to understand that there are many points of view worth considering on most important issues.

Following our debut at Liberal Arts Weekend, the talk-back session was heated and engaging, with some students angered and others inspired. They talked for more than 30 minutes after the performance. In their written responses, many students said they were affected by the thought-provoking performance; for some it was a highpoint of their weekend. The following fall semester, more than 100 students saw the improvisational performance in a cafeteria setting on campus. They took part in a talk-back session, and many also took the issues we explored back to class and wrote assigned response papers.

Video

The second year of this civic engagement project involved creating a 10-minute streaming media video to show teachers how to use Matter of Fact techniques to facilitate discussion of controversial issues in any classroom. While I understand that these techniques are utilized by trained theater people for performance, it is my belief that anyone can use some of the most basic improv methods to stimulate class discussion in almost any classroom setting. The streaming media was designed to function as an aid for teachers who have little or no experience with such techniques, but who want to get students more engaged in an issue, i.e. more engaged in the concerns of the class or the wider community. After probing a few faculty members not involved in this project to see what issue they felt might cut across the curriculum, I decided we would focus on “cheating in the classroom” as a topic to illustrate this technique on the video.

Matter of Fact met weekly and began a process similar to our basic technique, but with the understanding that we were creating a video to be used to make improv useful in the classroom. Noreen McGinness, Instructional Designer at MCC, met with us as we developed our ideas and filmed all sessions to gather material for the video. We first discussed what civic engagement meant to each of us and talked about how we saw Matter of Fact as an aid to engagement. We then brainstormed scenarios about cheating, decided on a few we thought covered many different questions, and brainstormed to create characters and conflict. I worked with McGinness to determine gaps and turn the video into a teaching model on improvisation. The ultimate goal is to encourage students to examine issues in the best sense of the word – to get them thinking and listening more deeply – and thus to engage them in the classroom more fully through mind and body.

Matter of Fact also performed the “cheating” improv recently at Lowell High School for an audience of 200 who

responded with many comments and much energy during our talk-back session. We had some of the high school students step in to recreate roles for a second run-through, each showing the way he or she could have better handled the situation. Such physical involvement ended up underscoring the power of the scenario we had created and got the LHS students to continue the discussion when they left the performance. It also helped us see “cheating” as a particularly good choice of topics for the video, since so many students became engaged. We also enjoyed a side benefit: The “cheating” improv may lead to collaboration with Lowell High Leadership Academy students.

How To Use Improv In Your Classroom

- While I suggest watching the streaming video, which gives “legs” to these suggestions, below are key points for nontheater teachers interested in using improv in the classroom. The brainstorming process can be accomplished in one class, the creating process in another class, and the performance and discussion in a third. You can also assign writing about the learning process itself.
- Choose a topic you want to discuss, a topic that has some controversy implicit or explicit in it. A psychology teacher might want to raise a question about spanking; an environmental studies teacher might consider the implications of tearing down shade trees to create a pristine green lawn; a business teacher might look at under-the-table businesses; a government teacher might take on immigration. Look for something with an edge.
- In a large group, brainstorm different scenarios that could take place regarding this issue. At this point, do not censor at all, but keep a running list. For example, with the topic of cheating, our students came up with things like buying term papers online; the line between getting help and cheating; a person who doesn’t speak the language well having his/her paper corrected by the tutoring lab; text messaging answers to quizzes on cell phones, etc.
- Vote which scenario(s) students want to create.
- If you have a very large group, you may have to break into smaller groups to do the next step. Assuming for this exercise that you have one large group, move to the next step of refining the problem with more brainstorming. For example, with our “cheating” improv, one scenario we decided to create involved buying online papers. The next questions should narrow down the scenario: What situations might involve buying papers online? Again, allow a list to be made without censorship.
- To select a scenario, keep your eye out for conflict. You want to make sure you lead the students to create something that will not have an easy answer, but will include a dilemma -- a problem that can be seen from more than one angle. This will ultimately provoke a better conversation. In our “cheating” improv, we decided to have a situation that involved a student not receiving her diploma because of being caught buying online term papers.
- Further the discussion in a large group by creating the conflict more clearly. Ask questions such as, “What situation would ever make it understandable to buy an online paper?” In thinking through such a situation, see what suggestions students come up with for a scenario – a who/what/where. We decided to have three friends talking to each other by phone just after the “cheater” had been caught.
- Create characters. Here is where I take suggestions from the group, but use my discretion, keeping in mind such things as avoiding stereotypes as well as our increasingly complicated lives. By creating characters as a group, you also allow the class to step into the shoes of each person to better understand them. For example, in our “cheating” improv we gave the character who bought an online paper a baby and a job from which she was about to be fired. Thus, instead of demonizing her, she became sympathetic and her dilemma more fully understood.
- Put the improv “on its feet” in front of the class. Volunteers will usually step up to play roles, but if not, assign parts. Don’t worry if the improv doesn’t have an end. The point is to ask the class to make suggestions about what would make more conflict among the characters and what each person could do to “rev up” their part. Run it again and see if the situation becomes more interesting and if everyone seems somewhat sympathetic. For example, in our “cheating” scenario, one student ended up representing the “there should be no cheating no matter what” point of view, while another character was more sympathetic to their friend’s plight and felt her punishment was too harsh. These two characters talked together first, so the audience could see the conflict a bit, and then the third student was added – the one who had bought the paper online. As the conversation

continued among these three, it was easy to see how ideas of right and wrong were truly complex.

- After you run the improv, you will want to continue discussion. As you see controversy evolve (this is good!), talk about it. Then ask for volunteers who think they could handle the problem a different way. Substitute one actor at a time in a new role, having the original participants repeat their parts. You can do this with several different people. This enables the whole class to be involved and to allow students to have more perspective on the issues, depending on their solutions.
- Finish with a writing assignment about what was learned through this activity.

Reflections

"The students are still talking about the performance." -- Jennifer Hatem, Greater Lowell Regional Vocational Technical High School

"The students expressed to me how much they enjoyed the improvisations. They felt the discussions that followed were very helpful in understanding the different options that might be available to handle these or other sensitive issues that today's teens may face."-- Sheila Gagnon, Peer Advisor, Dracut Public Schools

"It was good; it showed a lot of issues of today and how people react to them." -- Lowell High School student

"An excellent performance that all students at Middlesex Community College and other colleges should have the chance to experience." -- MCC student

Useful References

Matter of Fact video available at

http://lucas.middlesex.mass.edu/RAMGEN//MCGINNESSN/Improv_classroom.rm

-- RealPlayer is required

For more information about Matter of Fact and courses with Professor Jean Trounstine, please visit www.jeantrounstine.com.

*Projects
in Math
and Science*



Capstone Statistics Project: Civic Engagement Collaborative

Professor Dora Ottariano

MCC Course: Statistics

Abstract

The capstone project in this course, a five-page research paper, culminates in combining all aspects of the curriculum. Students develop a hypothesis or claim about an aspect of the community or civic engagement, then gather their own data and test this claim. Examples include claims made by Lowell National Historical Park regarding the flow rate of the Merrimack River (which runs through the park); the proportion of visitors to the park during summer months who visited particular exhibits; and the proportion of empty seats on canal-boat tours. Participating in projects that address community needs and applying statistical knowledge to real-world situations are goals of this course, thus allowing students the opportunity to raise their awareness about various aspects of their community.

Participating in projects that address community needs and applying statistical knowledge to real-world situations are goals of this course, thus allowing students the opportunity to raise their awareness about various aspects of their community.

People, Time and Materials

People: Each student completes his/her own five-page research paper. The class usually consists of 25 people.

Time: This project is assigned two to three weeks before the semester ends. It is due the day of the final exam and takes the place of the final exam. Students present their project to the rest of the class. Students learn the statistics necessary to complete this project in class, but work on the paper outside of class.

Materials: Computer to gather data and to compose the document.

How To Do This Project With Your Class

- Meet with the community partner, or partners, before the semester begins, or very early in the semester. Decide how the students in the course can help the community partner and simultaneously learn the course content.
- Have the community partner speak to the class.
- If possible, have students go to the community organization to gather information.
- Develop a hypothesis or claim about a mean or proportion. (It will be easier to work with a claim made by a manufacturer or agency.)
- The claim should be about a community or civic-engagement topic. Some examples obtained from Lowell National Historical Park are below:
 - a) Lowell National Historical Park canal-boat tours were 60 percent full during the months of July and August, 2005.
 - b) 50 percent of the visitors to Lowell National Historical Park during the months of May, June, July and August, 2005, attended a canal-boat tour and visited the Boott Cotton Mills Museum.
 - c) The flow rate of the Merrimack River during May, June, July and August, 2004, exceeded 5,500 cubic feet per second (cfs) 25 percent of the time.

- Before students start gathering data for the project, have them state what claim they have decided to test. This way the instructor can assess the feasibility of the project.
- Collect appropriate data to answer the question. Ask students to describe how they obtained the data and how they attempted to control lurking variables in the data-collection process.
- Decide on an appropriate hypothesis-testing method to test this claim. This will be based on the sample data that has been collected. Students must pay attention to sample size, shape of the original distribution, etc.
- Summarize and display the data collected using appropriate graphical and numerical methods. Data, calculations and graphs must be displayed neatly.

Format for Final Paper

The final paper must be at least five pages and include the following:

- Description of what the project is about and why the student chose this topic. Include research the student conducted and any resources that were used in a bibliography.
- Statement of the claim that is being tested, what test will be used, and why that test was chosen. (This will be based on the sample data, as stated above.)
- Description of how the random sample was collected, with mention of how randomness was assured and how lurking variables were controlled. Data must be included in the report.
- Graphical display of the data and all calculations.
- Correct steps of hypothesis testing.
- Final summary and conclusion.



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Using Real Data Regarding Tourism in Lowell

Professor Beth Fraser

MCC Course: Math Connections

Abstract

Lowell has become a destination city, with people from across the country coming to see its museums, canals and special events. The city is also unique in that so many of these attractions are presented by volunteers. By looking at the data regarding both tourism and volunteerism, students will get a greater appreciation for the area where they live and its history. Specific topics include: volunteerism and tourism at Lowell National Historical Park; tourism at museums; attractions and special events in Lowell; volunteers and monies from the ethnic food vendors at the Lowell Folk Festival; recycling at the Lowell Folk Festival; and the history of immigration in Lowell.

Lowell has become a destination city, with people from across the country coming to see its museums, canals and special events. The city is also unique in that so many of these attractions are presented by volunteers. By looking at the data regarding both tourism and volunteerism, students will get a greater appreciation for the area where they live and its history.

People, Time and Materials

People: Sixteen students (one class section) worked in groups of three or four, and met with a designated contact person for their chosen topic.

Time: Students had about two months to work on this project. They were given one class period to plan their strategies regarding interviewing the contact person, gathering the data, and determining how they would present it. Sometimes a second class period was necessary to provide an opportunity to work in their groups and seek further assistance from me. The remaining work was done outside of class: approximately six to eight hours of organizing data, preparing a presentation, and writing a brief summary paper.

Materials: Students were required to use Excel to present their charts and graphs, both in the paper and in their presentation.

How To Do This Project With Your Class

- Gather contact information for designated staff. This was accomplished through the LNHP project liaison and my own personal contacts in the community.
- Distribute a brief summary of the topics to the class. Discuss what topic they might like to do, and explain exactly what the student focus is.
- Relate the charts previously taught in class to the information they will gather. Students then meet in groups and arrange to contact the designated person for their topic. Once that is done, they submit a signed sheet to me outlining their plans.
- Students then meet with the contact, receive the data and discuss any questions about it. They are encouraged to keep in touch with the contact if questions arise as they are preparing their materials. After this meeting, another form is submitted outlining who went, what happened, and any questions they still have.
- A second class session may be held to facilitate this next part. Students must now divide up the data into different parts of the topics. For example, if the topic is "tourism in the national park," one student might deal with the museum, another with the canal and other tours, and another with special events. Each student writes a brief paper discussing the process and presents the data they gathered, along with several Excel charts, statistics, and an interpretation of the data.

- Students must present the charts to the class and discuss their findings. These presentations are made during the final exam period at the end of the semester.

Tips for Success

- As this project goes along, be available to the students for their questions. They may feel a bit “out there,” since the directions are very general. I want them to “figure it out” to some extent, but not to feel frustrated.
- Be flexible. Things may not go exactly to plan, so you have to be willing to “go with the flow” at times.

Useful Reference

For more information about the Lowell Folk Festival, visit www.lowellfolkfestival.org.



Daily Stream Flow

Professor Linda Dart-Kathios

MCC Course: Pre-Calculus for Business and Social Sciences

Abstract

Concepts in mathematics often seem abstract to students. Confined to the four walls of the classroom, students fail to see the connection of these concepts to the real world. To experience modeling real-life data, we teamed up with Lowell National Historical Park. The park staff takes daily readings of stream flow on the Merrimack River (which runs through the park) to determine if it is safe for canal-boat tours to be conducted. This data was analyzed to determine the best-fit model for predicting stream flow based on month and date.

“This project has given me extra insight into how pre-calculus can be used in real life . . . this . . . will actually be used for something besides determining our grades.”

- MCC student

People, Time and Materials

People: One section of Pre-Calculus participated, which consisted of 31 students.

Time: This project covered a two-month period. Classroom time was two classes. A park interpreter attended the first class to explain the importance of the data, how it is collected, and how it is used. The second class was utilized to explain the project, make clear the expectations and timeline, and answer any questions.

Materials: To perform the analysis, students were required to have a TI 83 calculator, access to a computer to download data, and access to a computer TI link to print out the graph and table of data.

How To Do This Project With Your Class

- Meet with national park staff to determine the data that will be used.
- Have a park interpreter attend a class to explain how the data is collected and used.
- Assign each student a specific day, and keep a log of this information. Invariably at least one student will forget what day they were assigned.
- Distribute the project description, timeline and evaluation rubric.
- Provide students a handout regarding how to retrieve the data from the Internet.
- Continue through the course of the project to work with students to ensure they understand how to model the data, and what is expected of them on the project.

Reflections

“This project has given me extra insight into how pre-calculus can be used in real life . . . this . . . will actually be used for something besides determining our grades.” -- MCC student

“I did learn that modeling data isn't something that is arbitrarily learned in school and then has no actual use. It can be used in such fields as engineering or even as a tool in a field that does not necessarily revolve around it, such as a canal-boat tour. I found this project to be quite interesting and eye-opening to the practical application of the math we are learning right now to the future.” -- MCC student

"I think that this project provided a good example of how to apply mathematical principles to real-world problems." -- MCC student

"On May 15th and 16th, 2006, Middlesex Community College was forced to close due to severe flooding, which affected thousands of people in the New England region. Many families, including MCC students and staff, were evacuated to safety, but sections of Lowell were severely damaged by floodwaters from both the Merrimack and Concord rivers. One week later, the final Lowell Civic Collaborative 'Celebration and Showcase' was held in the Boott Mills Special Events Center at Lowell National Historical Park. Our celebration included students and faculty sharing stories of their course projects. Evidence of the flood damage was still apparent as our guests rode the LNHP trolley from MCC to Boott Mills. During their presentations, several students in this project reflected on how the flooding might affect stream-flow analysis in the future. Another student spoke about the real-life aspect of this project, with its focus on rivers, adding 'I'll never look at a river the same way.' Hearing MCC students relate their experiences is a strong reinforcement of the value of community-based civic learning experiences." -- Sheri Denk, TLC Coordinator and MCC Service-Learning Coordinator.

Instruction Sheet for "Daily Stream Flow"

Objective: Using data gathered on daily stream flow, determine the "best fit" model to predict the stream flow of the Merrimack River and Canals based on day and month.

Procedure:

1. Go to the data collection website (provided in class) and print out the data.
2. Each student will be assigned a different day. Once you have printed out the data see me for the assigned date.
3. Using data from the same day each month (beginning with the month of April, ending with October) subtract the stream flow data entitled Concord Below R Meadow Brook at Lowell, from the stream flow data entitled Merrimack River BL Concord River at Lowell.
4. Determine a model that best fits this data. Use numeric coding for the months (i.e. April = 4, May= 5, June = 6 etc.). This coding will represent the independent variable. Water flow will represent the dependent variable.
5. Explore all the models we discussed in class to determine which is the "best fit."

Report: Upon completion of the project your final report should consist of the following (minimum of two pages typed, double spaced). You may include any background information you gather from your research on the canal tours.

1. The equation of the model you have chosen.
2. A graph of the data with the model clearly labeled. Make sure you label both axes properly. The graph and table of data should be printed out in the Math Lab. It will be printed directly from your calculator. Math Lab personnel can assist you with this.
3. A write up describing and responding to the following issues and questions:
 - a. Other models you explored and an explanation as to why you did not use them.
 - b. Why you chose the model you did. How well did it fit the data? How do you know this?
 - c. The range and domain of your model. How does this compare to the theoretical range and domain of that model?
 - d. Why were the months of January – March, November and December not used in the model?
 - e. Is there a specific month during which the water flow appears to be the strongest? The weakest?
 - f. Compare your model to one of your classmate's. How do they differ?
 - g. Discuss how LNHP could utilize this model.
4. Include in the write up your overall thoughts about the project:
 - a. How was this problem different from problems we worked on in class?
 - b. What types of issues did you run into?
 - c. What did you learn that you did not know about Lowell National Historical Park and modeling data?
 - d. What thing(s), if any, would you change about this project?



Math Makes a Civic Connection: The Staircase Project

Professor Robert Bowles

MCC Course: Applied Technical Mathematics II

Abstract

"The Staircase Project" (adapted from Wentworth Institute of Technology 2000) blended linear inequality theory and the physical characteristics of historical staircases to familiarize students with Lowell's role in the Industrial Revolution. Students used inequality theory to model the Massachusetts State Building Code for staircases. They then measured the height and depth of stairs found in a variety of buildings in the city and Lowell National Historical Park, including Boott Cotton Mills, Market Mills, The Mogan Cultural Center, and the Mill Agent's House, each one prominent during Lowell's textile heyday. Students performed a code-compliance analysis, reported findings in technical briefings, and wrote research papers on Lowell's role in the Industrial Revolution.

How To Do This Project With Your Class

"The Staircase Project" required the support and cooperation of administrative staff at both Lowell National Historical Park and Middlesex Community College. This included Becky Warren, Supervisory Park Interpreter, Lowell National Historical Park; Sheri Denk, TLC Coordinator and MCC Service-Learning Coordinator; and Colleen Cox, Director, New Program Development at Middlesex.

Altogether, we took one week to complete the work: four hours of classroom time (two class periods) and two to four hours outside of class to gather data. More time may be useful. The first class period introduced the project and covered a review of inequality theory. Students presented their findings and reflected on their experience during the second class period. Providing instructions regarding how to organize presentations is suggested. In the field, tape measures or other simple linear measurement instruments were given to students. Doing the project during good weather, providing city maps to help locate buildings, and suggesting a wide variety of buildings will encourage a successful experience.

"I enjoyed talking about some of Lowell's history with the park ranger: the technology which helped move Lowell into the industrial age; the architectural designs of stone and wood which have lasted thus far; the ability to see what one person's vision and determination can build, create, and engineer in hopes of making life better or more beautiful."

- MCC student

Reflections

"I feel I learned a lot more about Lowell and how it started it all for the Industrial Revolution in the United States. I found out that Lowell was named after Francis Lowell. It was also a great place for the mills because of the Merrimack River and all of its canals. I think it's great to learn about the different cities and towns that we live in and learn about how they all got started. Like my hometown, Stoneham, Mass., used to be a town that made and fixed shoes. Also, 'The Staircase Project' taught me more about the code of stairs in Massachusetts. I never knew before the project that there were even codes out there that the state had for building stairs. The only thing I would fix with the project (is that) I felt we had to rush through it and could have made it better with more time." -- MCC student

"The stairs we studied were everywhere in Lowell, from the oldest building to the newest. I learned that the city has changed a lot over the years. But the heritage it gives its people will never change." -- MCC student

"This project was about measuring stairs, but it became a history lesson of sorts -- one I gladly would do again." -- MCC student

"I enjoyed talking about some of Lowell's history with the park ranger: the technology which helped move Lowell into the industrial age; the architectural designs of stone and wood that have lasted thus far; the ability to see what one person's vision and determination can build, create, and engineer in hopes of making life better or more beautiful." -- MCC student

"Prior to doing 'The Staircase Project' I was afraid to walk around Lowell. With my group with me and seeing all the history first hand, my image of Lowell changed. How can a place with so much meaning and dedication have such a bad reputation? All in all, I enjoyed the project and I have more respect for Lowell." -- MCC student

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Wentworth Institute of Technology, Applied Mathematics and Science Department. 2000. Mathematics Laboratory Investigation: Staircases. In *Mathematics for Technology, Laboratory Investigations (Introductory Level)*. Wentworth Institute of Technology.



Effect of Sheep Grazing on Invasive Species Growth

Professor Jessie Klein

MCC Course: Botany

Abstract

Invasive plant species limit the habitats available to both native plants and their associated bird populations. Minute Man National Historical Park (MMNHP) has been conducting a study to determine if sheep grazing is as effective in controlling growth of invasive species as conventional mowing. In fall 2004, MCC students in Botany collected data on invasive species growing in a field that had been used for sheep grazing. They recorded numbers of live vs. dead plants, plant height and leaf number. The data was shared with MMNHP staff as part of their ongoing invasive species study. This project gave the students an opportunity to do actual scientific field work so that they could experience the type of work done by plant ecologists.

“The field experience (at Minute Man National Park) reinforced the concept of using an ecologically sound strategy in invasive species control, while also giving us an opportunity to provide useful and valuable data for ongoing conservation efforts.”

- MCC student

People, Time and Materials

People: There were 24 students in the class; they were divided into four groups of six.

Time: This activity required three hours preparation time for the instructor: meeting with the national park staff, visiting the site, writing student instructions and constructing the quadrates. The data collection was completed during a two-hour lab period. Another two-hour lab period was spent on data analysis. Students wrote the actual lab report at home.

Materials: Quadrates, meter sticks, clipboards, pencils, data charts, computers, gloves and insect spray.

How To Do This Project With Your Class

- Meet with national park staff to discuss the project and their needs.
- Ask the park staff to attend a class session to explain the project.
- Visit the study site before writing lab instructions.
- Construct the quadrates used in data collection.
- Write the instructions for collecting data (see below) and directions to the site.
- Meet the students at the study site. (Make them aware of poison ivy and ticks.)
- Organize the students into groups and distribute equipment. (We used laptops to collect the data. However, it is important to take clipboards and charts for recording the data in case of a computer failure.)
- Work with the students to analyze the data and make charts using Excel.
- Grade the lab reports.
- Send the results to the national park.

Reflection

"The field experience (at Minute Man National Park) reinforced the concept of using an ecologically sound strategy in invasive species control, while also giving us an opportunity to provide useful and valuable data for ongoing conservation efforts." -- MCC student

Instruction Sheet for "Effect of Sheep Grazing on Invasive Species Growth"

Data Collection

Is sheep grazing an effective method of bittersweet control?

The purpose of this activity is to study the impact of sheep grazing on bittersweet (*Celastrus orbiculatus*) in Minute Man National Historical Park. Bittersweet grows in the fields and forests of New England. One area of the field we will study was fenced off to keep sheep from eating the bittersweet. Sheep were allowed to graze in the rest of the field. We will compare characteristics of bittersweet in the grazed and ungrazed areas. In this activity you will be following procedures that an ecologist would use to gather data.

1. Use tape or string to run a 10-meters line, called a transect. Tape or string can be held in place with a rock. If you are using string, it has been marked off at two-meter intervals.
2. Lay the left bottom corner of the square frame at the "0 meter" mark on the tape. The square frame is called a quadrant (quad). Within the quad, measure the following characteristics.
 - a. length in centimeters of the five tallest stems
 - b. number of leaves per tall stem
 - c. percent cover

Record your data on the clip board and in the computer (remember to save occasionally on the computer). Repeat the above procedure by moving the quad to the 2-, 4-, 6-, 8- and 10- meter marks.

Note: Students were provided separate instruction sheets for the three invasive species we studied: bittersweet, blackberry and buckthorn.



Statistics on the Effect of Sheep Grazing on Invasive Species Growth

Professor Mike Williamson

MCC Course: Math Modeling

Abstract

Math Modeling is a survey course designed to provide liberal arts students with exposure to practical applications of mathematics. Using data collected previously by students in an MCC Botany class on the effect of sheep grazing on invasive plant species in Minute Man National Historical Park (see Professor Jessie Klein's project), students categorize the groups of plants and provide graphs and simple data analysis on the data. The summary statistics and graphs help the park better understand the effect of sheep grazing on invasive plant species. Students are able to see how statistics may be used to organize and interpret data in a real-world situation.

The summary statistics and graphs help the park better understand the effect of sheep grazing on invasive plant species. Students are able to see how statistics may be used to organize and interpret data in a real-world situation.

People, Time and Materials

People: 20 students in one section of Math Modeling participated.

Time: I assigned this project over a one-month period. Classroom time was about three class periods. During one period, a park interpreter spoke to the class to explain how the data was collected, why it is important, and why it is relevant to the park. The other class periods were devoted to explaining the details of the project and familiarizing students with Excel.

Materials: To perform the analysis students were required to have a TI 83 calculator and access to a computer with Excel.

How To Do This Project With Your Class

- Invite a park interpreter to attend a class to explain how the data is collected and used.
- Ask students to research the type of plants in the data and group the plants according to categories.
- Let the students decide the most appropriate way to graph the data.
- Have the students calculate descriptive statistics of the data and summarize their findings in a report which is then made available to the park.
- Include a rubric with the project so students know exactly how they will be evaluated.

Instruction Sheets for "Statistics on the Effect of Sheep Grazing on Invasive Species Growth"

Graphing/Data Project, Part 1

Background: This data was collected by an MCC science class at Minute Man National Historic Park. The park wants to control invasive plant species within the park's boundaries. The students measured the effect of sheep grazing on the

invasive species. They collected the data before and after grazing. The park would like some simple analysis done with the data to help them decide if using sheep is a viable way to control the problem.

Read the following information about the problem from the Minute Man National Historic Park website:

- <http://www.nps.gov/mima/pphtml/subenvironmentalfactors28.html>
- <http://www.nps.gov/mima/MIMA-03APP.htm> (Section V Goals)

The Project: Each student will get the raw data for a certain invasive plant. There are slight variations in the type of data collected for each plant.

Record the name of the plant here: _____

Assignment: Research your specific plant on the web. Write a paragraph about the plant and why it is considered invasive. These key words might be helpful in your search: "invasive," "non-native," "exotic," "noxious," "alien," the plant's name and scientific name (when you find it). The sites below might also be helpful.

- <http://www.nps.gov/plants/alien/index.htm>
- <http://www.newfs.org/consERVE/invasive.htm>

Explore the various ways that you could display the data to help make sense of the data. Keep the park's needs in mind.

Make a list of three possible graphs that you could make with this data. Include the data you want to display and tell us what will be displayed on the vertical axis and what will be displayed on the horizontal axis.

1. _____
2. _____
3. _____

Assignment: Make each of the three graphs that you listed above. Use a full sheet of graph paper. Make the graphs with pencil initially, but when it is finalized go over it with marker. Be prepared to present your graphs in class.

Graphing/Data Project, Part 2

Background: This data was collected by an MCC science class at Minute Man National Historical Park. The park wants to control invasive plant species within the park's boundaries. The students measured the effect of sheep grazing on the invasive plant species. They collected the data before and after grazing. The park would like some simple analysis done with the data to help them decide if using sheep is a viable way to control the problem.

BITTERSWEET, Number of Leaves

Assignment:

- 1) Find the mean and the standard deviation for the number of leaves for both the grazed and ungrazed data.
 - Ungrazed mean number of leaves = _____
 - Ungrazed standard deviation = _____
 - Grazed mean number of leaves = _____
 - Grazed standard deviation = _____

- 2) Graph the ungrazed mean number of leaves and grazed mean number of leaves, side by side in a column chart in Excel. (Use clustered column with 3D effect.)
 - a) Include a title for your graph.
 - b) Clearly label the axes, including units.
 - c) Make sure the legend is clear.
 - d) Use colors.
- 3) Graph the ungrazed mean number of leaves and grazed mean number of leaves for each quad side by side in a column chart in Excel. (Use clustered column with 3D effect.)
- 4) Write up a brief paragraph explaining the data. Does the grazing look like it was effective? Is there anything unusual in the data that needs to be mentioned?

Making a column chart in Excel.

- 1) To do this, enter the average values in an Excel spreadsheet.

	Dandelion
Grazed	56
Ungrazed	34

- 2) Highlight the data and begin the Chart Wizard. (Use the icon or go to the Insert menu.)
- 3) In Step 1, choose the chart type, column chart, and subtype. Click next.
- 4) In Step 2, you will get a preview of your graph. Change the series between rows and columns to decide which way you prefer it to be displayed. If you didn't highlight the data, or you want to change the data that is highlighted, use the data range. Click next.
- 5) In Step 3, insert titles and change the gridlines or make other modifications to the graph. Click next.
- 6) In Step 4, choose the option to insert the chart as a new sheet.

Print up the graphs. Make sure that they are neat and suitable to be presented to the national park for use.

Note: Students were provided separate graphing instruction sheets for the three invasive species we studied: bittersweet, blackberry and buckthorn.

Environmental Water Unit and Water Quality Testing on the Concord River in Minute Man National Historic Park

Professor Thomas Vaughn

MCC Course: Environmental Studies

Abstract

Water, water resources and water quality are important issues raised in an Environmental Studies course. By using the service-learning/civic engagement model, this water project actualized for students many of the conceptual lessons of the course's water unit. Students researched various topics concerned with water resources, became aware of the water-quality parameters, and tested water samples using these water-quality criteria. The project cumulated in a poster session produced by groups of students from within the class. Topics on water issues, such as pollution, conservation, quality, and the future of water in the 21st century, were all covered. Each student was required to identify civic actions they could take to help improve water quality and/or to conserve water resources.

People, Time and Materials

People: One section of Environmental Studies, with 23 students enrolled, took part in this project. Students were divided into five working groups on various water topics.

Time: The project was announced at the beginning of spring semester (late January) and included in the syllabus. In March, the student working-groups (with topics) were formed. One class period (one hour and 45 minutes) was spent in the Middlesex Community College library on the Lowell campus. Three class periods were devoted to the project so students could research in the library and work with their groups. Water collection at the Concord River and water testing in the laboratory back at MCC took two hours. Finally, one class period was devoted to student-group presentations of their posters to the class.

Materials: Research material came from the water chapter in our textbook, handouts from the professor, Internet resources and water-quality testing materials from the Middlesex Community College Science Department supplies (such as a dissolved oxygen kit, nitrate kit, fecal testing pads, thermometer, pH meter, Secchi disk, and meter stick). An incubator is needed to heat the fecal testing pad at 37 Celsius for 24 hours.

How To Do This Project With Your Class

- Identify an important topic that has wide appeal for students who have shown an interest in environmental studies by enrolling in the course. In this case, the topic was water and its many facets as an environmentally important resource.
- Marshall a number of necessary personnel and resources. Contact a local environmental group, such as a watershed association, Audubon Society, Sierra Club, Wilderness Society, Appalachian Mountain Club, state park or agency, or national park or agency, who will partner with you on the project. Every region of the country has dedicated organizations and individuals who are involved with educating the general public on water issues.



Students researched various topics concerned with water resources, became aware of the water-quality parameters, and tested water samples using these water-quality criteria. The project cumulated in a poster session produced by groups of students from within the class.

- Pick a water body, such as a river, lake or pond. We chose the Concord River, since we wanted to collaborate with Minute Man National Historical Park (the river runs through the park).
- Within the college community, start a dialogue with the head of your science department for support with chemicals and water-testing supplies. You should also involve the librarian: There are many resources about water on the Internet. The librarian can help your students become familiar with the publications and databases available to them through their student accounts.
- Bring in video and print materials that will give your students background knowledge on water. Our college library had the videotape series, *Race to Save the Planet*. There are two good episodes on water in this series. I supplemented the video with *The Global Ecology Handbook*, the practical supplement to the PBS series *Race to Save the Planet*. Any environmental studies course will have a textbook that contains a number of chapters on water and its environmental significance.
- After you become familiar with your students and understand the working dynamics of the class, form research groups. Our topics were: water pollution, water conservation, water quality and testing, and the future of water resources in the 21st century.
- Once the background material has been learned and the groups formed, bring students to the library for an orientation on water resources available on the Internet and in the library collection.
- Since collegiate students have varied schedules, they have difficulty finding time to do group work. Because of the scope of the project, three class periods seemed to be enough time for the students to work on their research together in class. The expectation was that more individual time outside the classroom would be devoted to the project for pieces to be completed by group members.
- A suitable water-testing site should be chosen. In our project, we tested the water at the North Bridge in Minute Man National Historical Park. Arrangements should be made ahead of time to use the laboratory facilities in the college.
- At the end of the project, some class time was given to students to assemble their posters and to practice their presentations.
- Since this project takes almost three months to complete, the poster session with presentations took place at the end of the semester. All the groups had to make a poster; explain the content to the class by a presentation; and either hand in a short research paper covering their topic or attach the content of their paper on the poster. It was a requirement that each group identify and list specific actions they could take to help improve water quality and/or conserve water resources.

Tips for Success

- Start with a limited topic. It is best to go through the process once with a topic that has a reasonable chance for success. It takes time to make the contacts (water partner group, collegiate resources, library and research resources), find the necessary equipment for water testing, and engage the students.
- Check in with the working groups of students on a periodic basis. You do not want to let them wait until the end of the semester to work on the project. Develop a timeline for completion of milestones.
- Be prepared for the unexpected. Plan for an alternate water-testing date if there is rain on the primary date. Try to have a backup plan for the water-testing kits. Sometimes the watershed groups or state agencies have kits that you can borrow for testing purposes.

Useful References

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*Projects
in the
Social Sciences*



Ambassador to Lowell

Professor Lucy Ogburn

MCC Course: Introduction to Sociology

Abstract

During the Lowell Civic Collaborative faculty institute I attended, we were introduced to many people in Lowell who could serve as resources as we planned our student projects. One such person was Daniell Krawczyk, a producer of youth television programs at Lowell Telecommunications Corporation (LTC), the city's community access TV station, media and technology center. He offered to work with a small group of students to produce videos on Lowell.

An important component of sociology is the study of culture, or the way of life of a group of people within a particular society. Subcultures exist within the context of a larger culture. The city of Lowell, including Lowell National Historical Park, offers a perfect opportunity to study subcultures. It is a sociological treasure that contains a vibrant and diverse mix of people. Through the video project, students in this class at MCC's suburban Bedford campus had the chance to become more familiar with Lowell, despite the negative stereotypes many held about this nearby urban community.

People, Time and Materials

People: Five students were involved in this project. Krawczyk had limited resources and could not accommodate more than that number.

Time: Students had about two months to complete their videos. Almost all of this time was spent outside of class. Students went to Lowell on at least two occasions to take still photos of their subject matter (three to four hours). They attended a workshop with Krawczyk at LTC for about five hours, in which he showed them how to convert still photos to video format. Some students made two visits to work with him.

Materials: Students needed their own cameras. Equipment to make the videos was supplied by LTC. Students wrote a script to accompany the photos.

How To Do This Project With Your Class

- Decide on the criteria for choosing students. In this case, students who did not do service-learning were offered this choice, as well as another choice.
- Type up instructions for students, explaining the project (see below).
- Set up a time for the video production workshop.
- Ask students to write and hand in a proposal for their video theme.
- Students take about 50 pictures and work on the accompanying script. Monitor student progress, making sure students are on task.
- Give students clear directions regarding the place and time of the production workshop.
- LTC produced one video with all students' separate videos on it.
- Show the video to the entire class.
- One student, who grew up in Lowell, made his video about his favorite places in the city. It was a very personal video, and made him feel very good about himself and his city. This video was chosen to be broadcast on Lowell community access television by LTC.

The city of Lowell, including Lowell National Historical Park, offers a perfect opportunity to study subcultures. It is a sociological treasure that contains a vibrant and diverse mix of people.

Permission

- If you are taking a picture of people close up enough for them to notice you doing so, and in which they can be easily recognized, you should politely explain that you are doing a project for your sociology class, and ask their permission to be photographed. You can briefly explain the theme of your project. You do not need to do this if you are taking photos from a distance and the subjects can not be easily identified.

Tips for Success

- Make sure students know what they are getting into. The picture taking, script writing and production of the video are time consuming. If students are not familiar with camera, video and editing equipment, the learning curve is steep.
- The project would have been impossible without the technical help from LTC. Technical expertise and equipment is essential.
- The possibility of having their video broadcast on local cable TV was a good incentive for students. But it was important for them to know that their video would not necessarily be aired.
- The biggest problem I encountered was working with students who chose the project for the wrong reasons. For example, they did not like the other project choices or thought this project would be “easy.”
- Overall, the students who took this video project seriously benefited greatly. They learned about a nearby city with which they were unfamiliar, and they broadened their social and cultural horizons. The fact that they produced a tangible product was an added plus.

Instruction Sheet for the “Ambassador to Lowell” Video Option

WHAT: If you choose this option, you will create a short (four- to six-minute) video on an aspect of life in the city of Lowell, to be aired by Lowell Telecommunication Corporation’s (LTC) channel 8 on its Youth Channel program. The idea behind this option is for you to get to know Lowell, or gain a new perspective on Lowell, and help viewers of the video do the same.

WHY: An important component of sociology is the study of culture, or the way of life of a group or groups of people. Lowell offers a perfect opportunity to do this: It is a sociological treasure that contains a vibrant and diverse mix of people, and it mirrors many aspects of American society. In addition, it is only 15 minutes from Bedford.

HOW: The range of subjects you can focus on in making your video is wide, as long as your video “tells a story” about a relevant aspect of life in Lowell. For example, you can choose an issue of interest to the citizens of Lowell and interview people on the street about it. You can make a video about the similarities and differences between MCC’s campuses in Bedford and Lowell, and what makes each unique. If you are unfamiliar with Lowell, you can make a video contrasting your initial and subsequent impressions of the city.

The video will be made from photos you take, preferably with a digital camera, although a conventional camera could be used. The LTC will then help you convert the photos into a video. You must provide about 50 photos and a script to accompany the video. This option, then, includes carefully planning a theme, visits to Lowell to take pictures that tell a “story” about some aspect of life in Lowell, writing a script for voice-over, and a three-hour session at LTC to convert pictures to video.

WHO: The contact person at LTC is Daniell Krawczyk. He is the person you will work with, and he will take you through the process of converting still photos into video.

HOW DO YOU GET STARTED?

First, you must think up an idea and get it approved by me. We will then run the idea by Daniell to make sure it’s workable. He is available for advice any time during the semester, as well. Your next step is to start taking photos. You must keep a notebook with notes about your photos, keeping track of the photo order and number, to remind you of what you photographed. This will be very important when you write your script. If you conduct interviews, you will want a small tape recorder, or your notebook and pen.

You should get started on your project soon -- the sooner the better. You must allow plenty of time to shoot the photos, write up the script, and put the video together. Daniell will need plenty of lead time to schedule your three-hour session with him.



“The Mill Girls and Immigrants Exhibit offers a unique experience for those who wish to learn the working and living conditions of the early 19th-century working girl. It also offers insight into the problems of trying to blend 19th-century architecture with 21st-century accessibility.”

- MCC student

What’s a Reasonable Accommodation? Adopt an Exhibit and Find Out!

Professor Donna Killian Duffy

MCC Course: Developmental Disabilities

Abstract

Developmental Disabilities is a course that explores the causes and treatment of a wide range of disabilities, and reviews ways that society helps through laws, such as the Americans with Disabilities Act (ADA). Students “adopted” the Mill Girls and Immigrants Exhibit at Lowell National Historical Park (LNHP) for a semester and small groups focused on one of three topics: analysis of the exhibit according to ADA standards in the context of a historically restored building; creation of interactive activities to engage people with different disabilities; and a comparative analysis of workers’ rights from 1850 to the present.

People, Time and Materials

People: The Developmental Disabilities class included 12 students, with four students in three groups. Throughout the semester, students in each of the groups visited the exhibit to review ideas; they met with LNHP’s Supervisory Park Interpreter Becky Warren and other park interpreters to clarify details on several occasions. In addition, Jean O’Connor, a disability specialist at Middlesex Community College, served as consultant to the groups. In two of the groups, students worked jointly on the creation of specific products (a scavenger hunt and timeline bookmark), while the other group of students pursued different aspects of accessibility in the exhibit.

Time: I assigned this project on the first day of class and it extended until the end of the semester. LNHP’s Warren presented an overview of the park in the second week of class, and the class visited the Mill Girls and Immigrants Exhibit during a class period. Students walked through the exhibit in small groups and tried to figure out how welcoming and accessible it would be for people with various disabilities. At the end of the visit, class members discussed their observations with Warren and we brainstormed projects that would benefit park personnel, fit with course material, and were realistic for the time frame of a semester. Our three projects emerged, and students rank-ordered their preferences, and, in general, were able to have their first or second choice.

Students met in small groups during the semester, posted ideas on a Blackboard online discussion site, and reported progress to the larger group. At the end of the semester, they presented their products and findings to five LNHP park interpreters, disability staff at the college, and the coordinator of MCC’s Service-Learning Program.

- First week presentation in class: 30 minutes
- Visit to Mill Girls and Immigrants Exhibit: 90 minutes
- Ongoing small group work: Approximately an hour per week
- Final presentation: 90 minutes

Materials: Students created materials for each of their projects. A student working on the accessibility project translated written descriptions of exhibits to audio files that could then be accessed through an MP3 player. This adaptation was a creative

and low-cost way to make the exhibits available to a much larger audience. Students working on interactive projects created a scavenger hunt printed on bright paper that can be distributed to interested visitors. The group focusing on changes in disability rights designed a bookmark to highlight significant dates related to workers' rights. The students researched the information and the Graphics Department at Middlesex transformed the information into a bookmark. One-thousand bookmarks were printed at a cost of \$387 and will be distributed by park interpreters.

How To Do This Project With Your Class

- Meet with the park interpreter at least one month before the beginning of the semester to explore course options that will be realistic and valuable for the needs of the park. Arrange dates for class visits, park visits and final project presentations.
- Schedule a time for the park interpreter to provide an overview to the class and a time for the class to visit the park as a group. I limited instructions for this initial visit, since I wanted students to generate ideas for projects based on their own observations. This worked better than I anticipated: Students had many creative and practical questions and ideas. They discussed different options with LNHP's Warren, and by the end of the visit we had three realistic and useful project plans.
- Have students decide how they will complete the projects and show them how addressing a real problem in the community will help them in future work settings.
- Provide opportunities for updates weekly or every other week so students can stay on track with the work. Some students sent me regular progress notes, while others jotted down updates two or three times in the semester. They were in contact with Warren on a regular basis and most individuals returned to the exhibit two or three times during the semester.
- Make adjustments to original plans. The group considering workers' rights originally wanted to create stories to depict life for someone injured on the job at the different historical periods. They hoped to create a short timeline for the exhibit. This was too ambitious and the idea of contributing to an exhibit was not workable in the short time frame. We revised the plan to highlight key issues for workers' rights and placed these on a timeline that could be displayed on a bookmark.
- Set a due date for final projects that is at least a couple of weeks before the end of the semester, to allow for revisions and adjustments.

Reflection

"The Mill Girls and Immigrants Exhibit offers a unique experience for those who wish to learn the working and living conditions of the early 19th-century working girl. It also offers insight into the problems of trying to blend 19th-century architecture with 21st-century accessibility. There are a number of areas that meet the scope of ADA requirements for accessibility in historic buildings. However, meeting the scope of a law and being functionally accessible for disabled visitors, while maintaining historic relevance, creates some opposing issues. This is where we will have to resolve the 'delicate balance' involved in meeting the needs of disabled visitors while maintaining the essence of the historic building."

-- MCC student

Tips for Success

- Adapt to student interest and skills whenever possible.
- Link project work to ongoing content, other courses and other aspects of students' lives, such as jobs and future plans.
- Be open to new learning. The students studying workers' rights reviewed a wide range of information and we learned firsthand the difficulty in interpreting the meaning of different historical events.
- Create opportunities for interaction with park staff over time. The final presentation with students and LNHP interpreters became a rich discussion of realistic ways to create change in communities. I think this discussion was possible, in part, because students were engaged with the exhibit over several weeks and had developed a deeper understanding of the complexities at the site.

Instruction Sheets for

What's a Reasonable Accommodation? Adopt an Exhibit and Find Out!

I. Guidelines for visit to the Mill Girls and Immigrants Exhibit

- One of the objectives of this course is to analyze a community setting and give concrete suggestions for making it more accessible and welcoming for people with disabilities. Chapter Two lists terms such as "accommodations," "adaptations" and "universal design." How can we translate these into the Mill Girls and Immigrants Exhibit?
- As you walk through the exhibit, think about adaptations that are realistic and could be created in the time frame of a semester:
 - An audiotape for certain populations?
 - Hands-on activities that could enhance the exhibit?
 - Activity sheets that would help to engage people more?
 - Research on techniques that would help park rangers adjust their presentations more effectively for different groups?
 - Investigation of resources available for redesigning museums to make them more accessible?
- These are a few ideas to consider. Jot down your own ideas and we will discuss them as a group at the end of the visit.

II. Mill Girls and Immigrants Group Project Choices

- Following our visit to the park, three general areas emerged as projects that would benefit park personnel and help you to learn the course material in an authentic way. One involves accessibility and ADA, another is the creation of interactive activities, and the third project involves stories of disabilities then and now.
- Ideally, we will have four to five participants in each group, so that tasks can be distributed as evenly as possible. I realize that you may have a strong preference for one project and I will try to accommodate your preferences as much as possible.
- Process for today:
 - 1) Read over the three project choices and think about what is involved in each.
 - 2) List your name and #1 under your first choice.
 - 3) List your name and #2 for your second choice.
 - 4) List your name and #3 for your third choice.
- Once groups are selected, we will establish a working plan for the semester with timeline and due dates so we can complete realistic products to deliver to the park by the end of the semester.

III. Accessibility Issues

- The focus of this project will be on analyzing the Mill Girls and Immigrants Exhibit according to ADA standards in the context of a historically restored building. We know that new buildings have to meet ADA standards, but what is a "reasonable" adjustment in a museum that depicts another historical period?
- The group will assess factors and provide specific guidelines that will assist park personnel as they begin exhibit renovations in the next year. It will involve measuring, research on ADA, and explorations of how museums and historical buildings have arrived at compromises for the general public.
- Benefits to you: Developing a working knowledge of key aspects of ADA; learning to negotiate the complexity of different demands; providing accurate information that will improve the lives of people with disabilities.

IV. Scavenger Hunt, Game Board, Trunk or Other Interactive Projects

- The aim of this group is to create interactive activities that will engage people with different disabilities who visit the exhibit. Two groups of park visitors that represent the greatest challenges are those who have mental retardation and those who are blind.
- The group will devise materials and activities that are sturdy and can be used by many visitors. The materials will need to be presented in an engaging manner, but also will need to connect to the story of the exhibit in a meaningful way. It will be valuable to have instructions in written or icon form, as well as on audiotape to

accommodate different needs. Part of this project will involve testing materials with visitors to the park. Funding for some of the materials will be available.

- Benefits to you: Creating curriculum materials that can be tested and used immediately; learning concrete ways to adapt to different disabilities; sharing your creativity so that many more visitors can have fun at the park.

V. Disabilities Then and Now: Stories and Progress

- A mill girl has an accident in 1850, an immigrant has an accident in 1910, and a factory worker has an accident in 2005. Each is left with the same disability as a result of the accident. Are there any differences in what will happen to them?
- This project will create a story for each situation and explain what types of laws or disability services were available for each case. It would help to begin with investigating a history of mill girls to find an actual case study that can be adapted. Then, explain services for each time period.
- The group will design an exhibit from this investigation. The stories can be available on a recorder with a "model" of some type to tell the stories. The exhibit will include a timeline showing when provisions, such as workmen's compensation and ADA, became available and what they offer to people who acquire disabilities while on the job.
- Benefits to you: Designing an exhibit that will be experienced by many visitors; helping to show the importance of public policies to address the needs of individuals; making course material "come alive" in a way that will help others to appreciate the challenges of those with disabilities.



Cambodian Expressions: Ethnographic Interviews and Posters

Professor Susan Thomson

MCC Course: Introduction to Cultural Anthropology

Abstract

Ethnography, or the description and analysis of culture based on fieldwork, is both the process and product of most research in cultural anthropology. Personal interviews are one of the main techniques used in this process. Cambodian Expressions Film and Arts Festival, sponsored by Middlesex Community College, Lowell National Historical Park and the Cambodian Artist's Association, is an annual month-long celebration of Cambodian culture including public art exhibits, presentations, cooking demonstrations and films. By interviewing and creating posters portraying the artists and community members who plan and contribute to this event, students simultaneously become more informed about the role of Cambodian culture in Lowell's civic life and learn how to do ethnographic research. By displaying the finished posters at the Boott Mills Gallery at LNHP, they also contribute to greater public awareness about the history and achievements of Lowell's Cambodian community.

People, Time and Materials

People: Two sections of Introduction to Cultural Anthropology were involved in this project, totaling about 40 students. Students were placed into groups of two to three, and paired with one person associated with Cambodian Expressions to interview. Fifteen interviews and posters were completed.

Time: I assigned this project over a two-month period. Classroom time was about three classes: one to explain the project and choose interviewees, and two to complete the project posters and have students present their work. Student time outside of class involved the interview (45 minutes to one hour), tape transcription (two to three hours) and poster preparation (one to two hours).

Materials: For the interviews: tape recorder and camera. For the posters, we used 11-by-17-inch paper (this allows the posters to be copied easily on a color copier, and also laminated, if you prefer). Origami paper, colored card stock, ribbons, decorative scissors and scrapbook materials were used to decorate the posters. I found that a "scrapbooking" analogy was very helpful, since many of my students did this at home.

How To Do This Project With Your Class

- Choose an appropriate community event for your class to learn about.
- Meet with the organizers of the event and ask for permission to conduct interviews. This is facilitated if you have already established a connection with at least one key member of the planning group who can then serve as a liaison and help introduce your project. Be sure to mention that the interview will be limited to 45 minutes to one hour.
- Collect names, phone numbers and e-mail addresses of people who agree to be interviewed.

"My experience with Cambodian Expressions has opened my eyes to the Cambodian immigrant world. My interview, poster and research showed me what these people have endured just to be able to live somewhere safe."

- MCC student

- Explain the project to your class, including the connection to your syllabus. Write all the names of potential interviewees on the board, give brief information about each person, and let students choose which person to interview (two to three students for each interviewee, depending on the size of the class and number of interviewees).
- Discuss the format of the posters. We decided that each poster should include a photo, at least one key quote from the person interviewed, and a brief synopsis of the interview. Be flexible and encourage creativity with the posters, but insist on certain guidelines so that all of the interviewees are treated equally.
- Provide instruction and practice in class about conducting interviews (see instructions below). The chapter titled “Asking Descriptive Questions” in James Spradley’s book *The Ethnographic Interview* (1979) is especially helpful.
- Brainstorm in class about appropriate questions to ask, and come up with a list of about 10 questions. This seems to be manageable for a 45-minute to one-hour interview. The instructor should then copy this list for everyone to use as a guide.
- Expect some scheduling problems, and also problems contacting interviewees. If the students have tried several times with no success, the instructor should contact the interviewee.
- Tape recording may be difficult for many students. Warn them to have sufficient batteries, to make sure the sound level is high, and to place the recorder close to the interviewee.
- Transcribing the interviews word-for-word from the tape recorder is very tedious, although produces a wonderful record of what was said. Summaries of conversations, including a few key quotes, may work better in some cases.
- Encourage students to take several photos at the interview, if the interviewee is comfortable with this. Including themselves in the photo is also an option. If an interviewee declines to be taped or photographed, this should be respected.
- Once the interviews are completed, have a “work session” in class to complete the posters. Bring art supplies and materials, encourage students to bring their stuff, too. This creates a great opportunity to “bond” while doing art together!
- The completion of the posters is usually a staggered process, with some students finishing early. (The groups that finish early can talk about their work while the others are still working.)
- Exhibit the posters at a national park or other public venue near you. If possible, have an opening ceremony and invite both students and interviewees to attend.
- Ask students to write a one-page reflection on their experience: what it meant to them personally, what they learned (about the Cambodian community, in this case), and what they might do differently if they were to do this project again.
- As an instructor, I liked this project because putting students in charge of representing their interviewee in a public art exhibit provided a “real-life” level of responsibility often missing in classroom work.

Reflections

“My experience with Cambodian Expressions has opened my eyes to the Cambodian immigrant world. My interview, poster and research showed me what these people have endured just to be able to live somewhere safe.” -- MCC student

“I had absolutely no idea how the interview would turn out. However, after meeting Yary it seemed as if there were no cultural differences. I felt like I had known him for awhile. I was surprised how smoothly the interview went. I also feel that the interview helped me to feel more comfortable around different cultures, especially with people who do not speak my language . . . it helped me feel more comfortable outreaching into the community.” -- MCC student

Instruction Sheet for Cambodian Expressions: Ethnographic Interviews and Posters

Guidelines for Interviewing

1. Before the interview, look over your list of questions about Cambodian Expressions. Think about your particular interviewee and what additional questions you might want to ask, based on his/her background. Also, do some background research, either on the web or in the library, about Cambodia and the Cambodian community in Lowell.
2. Check out your equipment thoroughly. Be sure your tape recorder and camera are working and have fresh batteries and tapes/film. You might want to divide up the work in your group so that one person is in charge of the tape recorder and another is responsible for the camera. Even though you are taping, it is also helpful to have a pen and notebook handy to jot down spellings and other information that you feel might be difficult to transcribe from the tape.
3. At the interview, take some time to establish rapport with your interviewee. Read through "Asking Descriptive Questions" by James Spradley (provided in class) to help with this process.
4. Overall, your main goal is to "open the door" into your interviewee's world, and to enter with respect, interest and an open mind. As Beatrice Webb put it, ". . . a spirit of adventure, a delight in watching human beings as human beings quite apart from what you can get out of their minds, an enjoyment of the play of your own personality with that of another, are gifts of rare value in the art of interviewing." (Webb 1926: 411). In other words, have fun!

Useful References

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Ethnographic Survey of Lowell: The Last Half Century

Professor Diane Lewis

MCC Course: World Regional Geography

Abstract

Geographers measure the similarities and differences among peoples and places by conducting surveys and interviews to identify the ethnographic makeup of various regions. In conjunction with the recently funded Ethnography and Immigration History Research Project at Lowell National Historical Park, students learned the valuable tool of ethnographic research. As part of collecting the data used for this project, students conducted interviews with immigrants from 34 different countries. The interviews focused on social and cultural patterns, along with demographic data.

People, Time and Materials

People: Four students completed the interviews as part of service-learning, and 19 students completed the interviews as part of a class project.

Time: This project was assigned as a semester project. Classroom time was about three classes in order to explain the project, who to interview, how to conduct the interview, and how to write up the findings. Students conducted the interviews outside of class time (each interview varied in length).

Materials: Students used a tape recorder and/or a camera. All students recorded their findings in a journal.

How To Do This Project With Your Class

- Provide information regarding how to contact community sites and/or immigrants to interview so that students may choose their interviewees. Students were also allowed to interview people known to them, such as fellow students, faculty or staff at MCC. Once chosen, interviewees were approved by the instructor.
- Decide on the number of interviews -- I asked each student to do four or five.
- Establish interview questions and go over them with the class for their input. Discuss the importance each question has in gathering ethnographic information.
- In addition to the specific questions, ask students to record each of their interviews through reflections. This should include a summary of how they conducted the interview, their feelings during the interview, as well as their interviewees' reactions during the interview.
- Use classroom time to review the information students are collecting, and to explain how this information may be useful to geographers. I also asked students to give me a weekly verbal report on their progress and/or any difficulties they were facing.
- Encourage students to make connections between what they are learning from the interviews and other course topics. I found students were very energetic with this, and we often used class time talking about their experiences with immigrants.
- The final project students submit should include copies of the interviews, a report describing the ethnographic findings, and a reflection concerning what they feel they gained personally from the project as well as how it might benefit the community.



“This whole experience interviewing these four phenomenal women has been absolutely rewarding and unforgettable. I look at these four women, as well as all other hard working immigrants, and I say to myself ‘Good for you! You deserve it.’ The word ‘immigrant’ will no longer be muttered under my breath or used as a derogatory name. Now the word ‘immigrant’ to me is an honorary title.”

- MCC student

Reflections

"To sum up what I have learned from getting to know the life story of four very different people, 'amazing' is one word that comes to mind. When I first started this assignment, I was a little scared and was not sure if the people I was interviewing would willingly want to answer my questions. It turns out that everyone that I sat down with and talked to was so down to earth and they opened their lives to me. I know it is hard for you to see what I mean; I just wrote down some random questions and printed the interviewee's answers. However, I got to sit down one-on-one and see what it is like through their eyes and I have the chance to feel their emotion and I have to say this is a cool project for anyone to do." -- MCC student

"The one major similarity that I noticed while interviewing all of them was the language barrier. None of them could speak perfectly understandable English, but I could really see how they had advanced their vocabulary with time ... I really learned to appreciate and respect other languages around the world. Sometimes I get frustrated when I'm out and people can't speak English and we can't understand one another. Doing this project has given me a patience that I never had with people before. I feel like I am a much better listener now because other people have so much to say that I was not aware of before." -- MCC student

"This whole experience interviewing these four phenomenal women has been absolutely rewarding and unforgettable. I look at these four women, as well as all other hard working immigrants, and I say to myself 'Good for you! You deserve it.' The word 'immigrant' will no longer be muttered under my breath or used as a derogatory name. Now the word 'immigrant' to me is an honorary title. In fact, I envy those who are able to say they are immigrants to the United States." -- MCC student

Useful References

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Profiles in Public Service

Professor Audrey Ambrosino

MCC Course: American Government

Abstract

Today's college students often have negative perceptions of those who embark on public-service careers. This often is the case, both because they are exposed to negative media portrayals and because they lack any real exposure to the details of public-service careers, even when relatives and friends are involved. This project was intended to, and appeared to succeed at, allowing students the opportunity to learn about the day-to-day duties, rewards and challenges of public service. The jobs held by individuals interviewed ranged from heads of organizations to maintenance workers, and included the Chief Ranger at Lowell National Historical Park. The final presentation session encouraged students to share their findings with one another, and to compare and contrast different types of public-service careers. In addition, one student was selected to present her project to the 2005 Lowell Civic Collaborative faculty institute.

People and Time

People: Students in one section of American Government were given this project to complete. The class consisted of 29 students.

Time: This project was assigned in the second half of the semester. Classroom time was used to explain the project, to answer questions as they arose, and for final class presentations. Out-of-class student time involved conducting their interviews and preparing their papers.

How To Do This Project With Your Class

- Hand out the project assignment sheet (see below). Explain details of assignment and brainstorm possible interview subjects. Discuss the meaning of public service in relation to public policy and American government.
- Students submit their choices for interview subjects before doing their interview. Choices are either approved or student is required to find another alternative. The only choices not approved are those that do not involve public servants.
- Students conduct interviews with their subjects of choice.
- Students complete four- to five-page papers documenting and summarizing interview results.
- Students hand in paper on last day of class and engage in discussion with their classmates.

Reflection

Students chose a variety of individuals involved in public service to profile. These included individuals involved in the local, state and federal government, as well as those serving in nonprofit organizations. Public-service positions included firefighters, policemen, active military, social workers, teachers, national park rangers, mental health counselors, janitors, etc. Reactions from students confirmed that they knew little of the day-to-day lives of public servants before doing their interviews. Further, students



Reactions from students confirmed that they knew little of the day-to-day lives of public servants before doing their interviews. Further, students seemed enlightened by what they learned, especially in the area of "rewards." Many of those public-service workers profiled indicated that while their careers may not be as lucrative as those in the private sector, the nonmonetary, more intrinsic rewards are substantial.

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Tips for Success

- Allow students to choose the individual they want to profile. This allows them to search their families and communities for those involved in public service.
- Offer to assist students in finding a subject if they are unable to find one on their own.
- Formulate some questions for the students to get key information and allow students to develop additional questions, tailored to the particular occupation and to their interests.
- Draft questions to determine not only what these individuals do day-to-day, but how they feel about what they do, challenges of the job, and whether they would encourage others to follow in their footsteps.
- Structure the final session as more of a discussion than a formal presentation. This alleviates students’ apprehension. Raise questions and have students compare and contrast the experiences of those they profiled.
- Encourage students to question their own beliefs and stereotypes of public servants.

Instruction Sheet for “Profiles in Public Service”

For this project, you must choose a person currently working in the public sector in the local area. They can be an elected or appointment government official, government worker, or someone who runs or works in a nonprofit agency or interest group. The person can work for the federal, state or local government or the nonprofit sector.

- If you need me to select a person for you, please let me know.
- You will need to have your choice approved in advance by me.
- Your task is to interview the person you have chosen and to write a four- to five-page paper summarizing the results of your interview.
- Information you should gather includes:
 - Name and job title
 - Amount of time in current job
 - Rewards of the position
 - Challenges of the position
 - Did the person’s education prepare them for their current position? If yes, in what ways?
 - What kinds of skills did they learn on the job?
 - What an average day on the job is like
 - How the public reacts to people in their position
 - If they had a son or a daughter, would they like to see them do the same kind of work? Why or why not?
 - A piece of advice to students considering public service
 - Four to five additional questions of your choice to ask your interview subject pertaining to public service
- On the final exam day, you will be required to hand in your paper and to be prepared to discuss the results of your interview.

APPENDIX

Additional Information about the Lowell Civic Collaborative

Service-Learning and Civic Engagement at Middlesex Community College

Broadly defined, service-learning is an instructional methodology integrating community service with critical and/or reflective thinking as part of an academic course. Civic engagement is a desired outcome of service-learning, but goes beyond to include the full spectrum of knowledge, responsibilities and public actions necessary for diverse community members to foster the common good.

At Middlesex Community College (MCC), work in service-learning began in 1992 and has required a time commitment of 22 hours per semester for student participation. Students who fulfill this service-learning commitment also fulfill the Values, Ethics and Social Policy Intensive Value in the college's core curriculum.

More recently, in response to a growing nation-wide imperative to emphasize civic engagement in higher education, and with the Lowell Civic Collaborative (TLC) in place, MCC decided to align its Service-Learning Program more closely with civic engagement themes. The college expanded its offerings to include projects with more flexible time commitments that promoted different aspects of civic learning. As John Saltmarsh has noted, "Civic learning includes knowledge -- historical, political and civic knowledge that arises from both academic and community sources; skills -- critical thinking, communication, public problem solving . . . and values -- justice, inclusion and participation" (Saltmarsh 2005).

With civic engagement as the main theme, and continuing emphasis on meeting the Intensive Value requirements, TLC projects requiring the 22-hour commitment were designated as service-learning, and those with shorter time limits were labeled as "civic engagement." Both approaches integrate academic coursework and community involvement with the over-arching goal of increased civic engagement.

TLC Civic Dialogues

College-wide civic dialogues complemented the course-based civic engagement and service-learning projects. Specific issues discussed ranged from, "How could your community become a better place for young adults?" and "What knowledge or skills will students need to be better citizens in our world in the future?" to challenges facing women in the 21st century and support for Hurricane Katrina recovery. A combination of small- and large-group discussion encouraged active participation. In the fall of 2005, a civic dialogue was sponsored by a McNeil/Lehrer By the People: America in the World grant, and a DVD of this event was created and distributed.

TLC Faculty Institutes

To prepare MCC faculty to incorporate civic engagement into their courses, institutes were arranged to connect faculty members with community needs and goals. Through presentations by the National Park Service, Lowell Police Department Race Relations Council, St. Julie's Asian Center, One Lowell, the United Teen Equality Center and Girls, Inc., faculty members not only became more knowledgeable about these organizations, but established crucial contacts for future collaboration. As a result, in addition to the projects with the national parks profiled in this guidebook, projects were developed with many other community groups. For example, Jan Arabas, an art professor at MCC, collaborated with Cambodian storytellers to produce illustrated storybooks of traditional Cambodian folktales for distribution to libraries, schools and families in Lowell.

The TLC faculty institutes also featured talks and workshops on course portfolios and service-learning, as well as opportunities for informal discussion and sharing ideas for course syllabi. Unpacking what "civic engagement" means -- both in general and in connection with specific courses -- was a key component of this work. Although many faculty members were initially skeptical, the institutes were highly successful: 31 faculty incorporated civic engagement and/or service-learning into their courses, with the participation of approximately 800 students over three years.

Profiles of Middlesex Community College, Lowell National Historical Park and Minute Man National Historical Park

Middlesex Community College

With an enrollment of more than 11,500 credit students, as well as thousands of noncredit and professional-development students, and campuses in both suburban Bedford and downtown Lowell, Middlesex is the largest community college in Massachusetts. Students enter the college with a wide variety of goals: job training for specific careers, academic preparation for transfer to four-year institutions, and life-long learning. Seventy-nine different degree and certificate programs are offered, including many, such as nursing or human services, that prepare students for immediate employment. In some cases, employers work directly with the college to develop programs for specific workplace needs. Faculty members offer expertise in fields ranging from poetry and painting, to business and mathematics. With an average class size of 19 and a Carnegie Academy for the Scholarship of Teaching and Learning group on campus, teaching is a primary goal. Many faculty members have also worked professionally in their fields outside of the classroom.

As for the student body, 80 percent of Middlesex students come from 16 surrounding towns, and the college also hosts many international students each year. Moreover, the student population represents significant diversity in both age and ethnicity. The average age is 24 and nearly 25 percent of MCC students are of Asian, African or Hispanic descent.

Ethnic diversity is especially evident at MCC's Lowell campus, where students reflect the multicultural background of the city itself. Lowell has a population of 105,167 (U.S. Census Bureau, Census 2000), 22 percent of which is foreign-born (twice the national average of 11 percent). The largest percentage of this foreign-born population (53 percent) is from Asia, and the second largest percentage (22 percent) is from Latin America. Lowell's Cambodian community is the second largest in the United States. Significantly, 17 percent of Lowell's total population lives below the federal poverty level, compared to the national rate of 12 percent (Lotspeich 2003).

In contrast, MCC's Bedford campus is situated in a wooded suburban setting spanning 200 acres, adjacent to a Veterans Administration hospital, frequently used by the college as a service-learning site. The campus is easily accessible by major highways linking technology and industry with the Boston metropolitan area.

Middlesex has a strong commitment to engagement in the local communities surrounding both its Bedford and Lowell campuses, and as a result has forged many campus-community partnerships. In addition to the Lowell Civic Collaborative, these partnerships include cooperative ventures with local public schools and businesses. Together with Lowell National Historical Park (LNHP) and the Cambodian Artist's Association, MCC helped create the Cambodian Expressions Film and Arts Festival. The college has also partnered with LNHP and UMASS Lowell to sponsor the Lowell Folk Festival, the Southeast Asian Water Festival and Lowell Women's Week.

Lowell National Historical Park

Intertwined in the midst of downtown Lowell, Lowell National Historical Park (LNHP) tells the story of Lowell's key role in America's Industrial Revolution. As one of the first successfully planned industrial cities in the United States, Lowell, in its heyday, was considered the "Venice of North America," attracting noted visitors such as Charles Dickens and the French political economist Michael Chevalier. LNHP includes a working weave room complete with more than 80 power looms, canals suitable for touring, a restored mill girls' boardinghouse, turn-of-the-century trolleys and exhibits documenting the lives of generations of immigrants who worked in the mills and settled in the area. In partnership with UMASS Lowell, the park also sponsors local community events and celebrations through the Patrick J. Mogan Cultural Center, and runs educational programs for schoolchildren and their teachers through the Tsongas Industrial History Center. LNHP is especially well known for its organization of the Lowell Folk Festival, an annual celebration of traditional music, dance and food from many different ethnic communities.

Minute Man National Historical Park

Located at the site of the opening battles of the American Revolution in Lexington and Concord, Minute Man National Historical Park (MMNHP) sits astride portions of the April 19th, 1775 Battle Road. The park explains the significance of these crucial first few days of the Revolution with a visitor center at Concord's North Bridge, and a multi-media theater program, titled "The Road to Revolution," at the main visitor center in Lexington. Park visitors can retrace the path of Colonial and British soldiers as they marched from Boston to Concord in 1775 along Battle Road, examine traditional uniforms and artifacts, and view the famous Minute Man statue marking "the shot heard round the world" at the North Bridge. Alternatively, one can bike along several miles of wooded trails or canoe down the Concord River. In addition to focusing on the Revolution and providing a bucolic setting for outdoor activities, the park maintains several exhibits celebrating the accomplishments and homes of noted 19th-century Concord authors, such as Louisa May Alcott, Henry David Thoreau, Ralph Waldo Emerson and Nathaniel Hawthorne. Moreover, recent initiatives at MMNHP -- such as the introduction of sheep as an alternative to conventional lawn mowers -- seek to restore the park's landscape and environment to its late 18th century characteristics.

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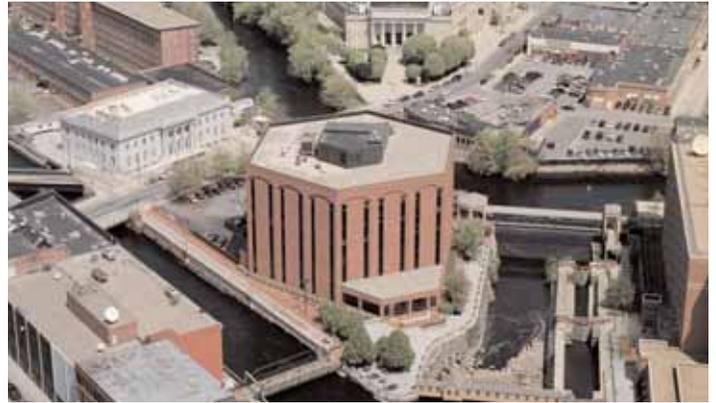
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*Middlesex Community College
Bedford Campus*

*Middlesex Community College
Lowell Campus*



*Lowell National Historical Park
Lowell, Mass.*

*Minute Man National Historical Park
North Bridge
Concord, Mass.*





The Lowell Civic Collaborative: *A Guidebook for Projects Between Community Colleges and National Parks*

This guide is a testament to the highly rewarding and astonishingly diverse educational opportunities to be discovered when American colleges team up with our national parks.

Thanks to an innovative three-year Learn & Serve America grant from the Corporation for National and Community Service, Middlesex Community College (with campuses in Bedford and Lowell, Mass.) and Lowell National Historical Park (located in downtown Lowell) created the Lowell Civic Collaborative (TLC) in 2003. Conceived to promote civic engagement and community service among Middlesex students, TLC was a resounding success. More than 30 math and science, humanities and social science faculty members were trained to incorporate civic engagement and service-learning components into their courses. As a result, more than 800 MCC students visited Lowell National Historical Park, Minute Man National Historical Park and other sites in the surrounding community to complete a wide variety of TLC projects.

The guidebook contains reports from 18 TLC projects and includes detailed instructions, suggestions and student reflections. It is designed to assist college faculty in creating civic engagement and service-learning projects that focus on their own communities and neighboring national parks.

